Chapter 15

Entrance Skin Exposure

Introduction:

One of the largest contributors to total population radiation exposure from man-made radiation sources is from diagnostic (dental and medical) radiography. One of the goals of the Conference of Radiation Control Program Directors (CRCPD) is to reduce the unnecessary component of dental and medical x-ray exposure to a level as low as reasonably achievable $(ALARA)^2$.

Reference 2 lists recommended patient exposure guides which reflect "State of current practice" in a cross section of radiography facilities across the United States. They are to be used as a tool for reducing unnecessary radiation exposure to patients, while maintaining or improving image quality. Calculated Entrance Skin Exposures (ESE) should be compared to these average values.

Exposures that significantly exceed the levels indicated in the guides for routine examinations are likely to represent unnecessary patient doses and causes for such excessive exposure should be investigated. A reasonable but arbitrary range of acceptability is ± 20% of a guide value.

Minimum Required Personnel Qualifications:

Level I (Basic X-ray Surveyor)

Testing Periodicity:

In conjunction with each x-ray survey.

Instrumentation:

1. ion chamber
2. electrometer
3. phantom
4. tape measure
5. 5 1.0mm copper sheets, 20 x 20 cm
6. Optional: CDRH test stand

References:

1. AAPM Report 31. *Standardized Methods for Measuring Diagnostic X-Ray Exposures*, 1990.

2. *Average Patient Exposure/Dose Guides. A report by Committee n Quality Assurance in Diagnostic Radiology (H-7)*. Conference of Radiation Control Program Directors, Inc. CRCPD Publication 92-4, 1992.

2. *Nationwide Evaluation of X-Ray Trends (NEXT)*, Conference of Radiation Control Program Directors, Inc. Frankfort: CRCPD. 1974 - 1994.